



BY JIM ROBINSON

# Fumed oak chest

**This five-decker oak chest of drawers was designed for the second stage of our bedroom suite renewal programme. The first part, an oak double bed, was featured in the December 2007 edition of The Woodworker. European yellow oak was chosen to match the bed and was bought as 25mm (1in) thick boards, sawn through and through**

## Preparing the components

Carefully select the wood for the sides, making sure each piece has at least one good side that can be used for the visible face. The wood for the base is not so critical as regards appearance, providing the front edge is good. Plane one good face on each board then thickness to 22mm (7/8in). Plane the edges square, ready for joining.

Biscuits are used to aid the alignment. I also prefer to use urea formaldehyde glue (Extramite) when working with hardwood as it does not creep as can happen with PVA glues. Trim the panels over width to allow for trimming of any tearout caused when cutting the rebates.

Cut the housings for the drawer dust panel frames with a router guided by a straightedge clamped to the board. Take the housings through to the rear of the panels but stop short of the front edge by 12mm (1/2in). Using the same cutter, cut the rebate along the rear of the panel to take the backing.

Make the bottom the same width and in the same manner as the sides. The only router work necessary is to cut the rebate at the rear. Trim both the sides and base to the required length and square the edges. To complete the sides ready for assembly, square the ends of the routed housings by hand using a chisel.

The bottom needs to be long enough to allow it to seat in the housings so that the unit finishes the correct width. It is necessary to remove a notch at each end of the bottom front so it will finish flush with the sides of the chest.



## CHEST OF DRAWERS CUTTING LIST

All dimensions are in millimetres

Part	Qty	L	W	T
Top	1	1020	500	22
Sides	2	1070	470	22
Base	1	965	470	22
Front drawer stretchers	4	965	63	22
Back drawer stretchers	4	965	63	22
Vertical drawer divider	1	180	63	22
Side drawer runner	8	380	50	22
Centre drawer runner	1	380	75	22
Centre drawer guide	1	430	22	22
Top stretchers	2	965	63	22
Top centre kicker	1	380	75	22
Top drawer kickers	2	380	50	22
Base stretcher	2	940	63	22
Front base moulding	1	1020	25	1
Side base moulding	2	12	510	25
Front corner feet	4	180	100	38
Rear corner feet - serpentine	2	150	100	38
Rear corner feet - straight	2	170	78	22
Brace for feet	4	230	100	16
Corner blocks for feet	4	80	32	32
Top drawer fronts	2	470	125	22
2nd drawer front	1	955	150	22
3rd drawer front	1	955	175	22
4th drawer front	1	955	200	22
Bottom drawer front	1	955	225	22
Top drawer sides	4	460	120	10
2nd drawer sides	2	460	150	10
3rd drawer sides	2	460	175	10
4th drawer sides	2	460	200	10
Bottom drawer sides	2	460	225	10
Top drawer backs	2	470	110	10
2nd drawer back	1	995	135	10
3rd drawer back	1	995	160	10
4th drawer back	1	995	185	10
Bottom drawer back	1	995	210	10

You'll also need: Offcuts for glue blocks; 2 sheets of 6mm MDF for drawer bottoms, dust panels and the carcase back; 10 x 80mm cabinet handles



Biscuits are used to maintain the board alignment under cramping pressure



Mark the notch on the front stretcher

### The drawer dust panels

The dust panels consist of front and rear stretchers and outside runners. In addition the top panel requires a centre runner and drawer guide. Make and fit the front stretchers first, cut them to a length of 943mm (37 $\frac{1}{2}$ in) and thickness to fit in the housings. Use a 3.35mm ( $\frac{1}{8}$ in) straight cutter installed in a hand-held router and guided by a fence to cut a groove along the inner edge of the stretcher to accept the dust boards and runner tenons.

Starting with the bottom front stretcher, slide it along the housing from the rear until it reaches the end. Then, with a flat marking knife resting against the inner face of the sides, mark the position for the front notch to be cut away. Apply glue to the front of the housing and slide the front drawer stretchers in one at a time and cramp until the glue has cured. After grooving and tenoning the side and centre runners they are glued to the front stretcher by only about 75mm (3in) along the housing in the side. This will enable any slight movement caused by changes of humidity in the local environment.

The tenon at the rear of the side runner should not enter the groove in the rear stretcher completely. There should be a gap



2 Rout the housings for the drawer dividers



3 Rebate the side panel to accept the back



4 The side panels are glued and cramped to the bottom



6 The front stretchers are glued and cramped in place flush with the sides



7 The side runners are glued to the front stretchers and to the first 75mm or so of the side panel



8 The rear stretchers are fitted flush with the rebate. They are not glued to the side runners

of at least 3mm ( $\frac{1}{8}$ in) to allow for any future movement. The centre runner supporting the top two small drawers is fitted in the same way.

When the dust boards have been slotted in place the rear drawer stretchers can be glued into position – but only to the housings. Position the rear drawer stretchers so they are in line with the rebate, enabling the back to be fixed to both the sides and the stretchers.

The top of the cabinet has a pair of stretchers dovetailed into the top of the side. Cut small grooves in the front and rear stretchers to take a centre kicker and a pair of side kickers before assembly. Before gluing in place, cut a through mortise in the front stretcher to take the small vertical drawer divider. The top stretchers are drilled so that the cabinet top can be screwed from below. To complete the carcass ready for the drawers, fit a drawer guide to the centre runner and kicker.

### The bottom stretchers

Fix the stretchers level with the front and back edges of the cabinet by gluing them to the bottom. Build the corners up level with the sides, ready to receive the bracket feet. Strengthen the joint between the sides and

base by gluing a series of short blocks cut from offcuts into the internal angles.

### The bottom moulding

Make the moulding by working a round on top and bottom edges, using a 10mm ( $\frac{3}{8}$ in) diameter bearing-guided roundover cutter on some 25mm (1in) thick material. Run the front moulding on a long length of board before trimming to a thickness of 11mm ( $\frac{7}{16}$ in). Make the side moulding in the same way, but in this case work it along the end of the board so that when applied the grain direction is the same as on the sides.

Mitre the ends and glue the front moulding in position first. The two side mouldings are applied in several short lengths, starting with the corner mitre.

### Bracket Feet

To make the serpentine parts of the feet you will need two pieces of the moulding to finish 170mm (6 $\frac{7}{8}$ in) long for each of the front feet and two pieces 145mm (5 $\frac{7}{8}$ in) long for each of the back feet. Make the moulding from 100 x 38mm (4 x 1 $\frac{1}{2}$ in) timber. It is easier to shape the moulding in one length before cutting each piece to the finished length.

The section required for the feet is shown



9 Remove belt sander marks from the sides with a card scraper

in fig 1. Start by squaring the ends of the blanks, then draw the outline of the section required on the ends. Plane a chamfer on the top edge of the moulding to remove most of the waste on the convex section.

Most of the remaining work, lower down on the moulding, can be removed with a small cove cutter. Use a combination of adjusting the depth of cut and the guiding fence. Carry out the final shaping with curved cabinet-makers' scrapers.

The ends of the feet furthest from the corners need to be shaped, but first cut the corner mitres. The blanks are left slightly over long to allow for further trimming of the mitres to ensure a good fit. Cut to the



10 Batts support the base moulding while it is glued and cramped in position



11 Create the moulding for the legs in stages. First form a simple chamfer



12 Next, use a core box cutter to further progress the shape of the moulding



14 Refine the profile using different types of curved cabinet scrapers



15 Cutting the mitres using a mitre saw jig. A G clamp supplements the saw's own clamping system



16 Shaping the foot on the bandsaw; you can use a coping saw as an alternative



outline using a bandsaw or coping saw, followed by filing and sanding. The front feet are glued together where the mitres join. When set, use a bearing guided cutter to make a 16mm ( $\frac{5}{8}$ in) deep rebate along the inside edge, starting a short way in from the ends. Trim a piece of 16mm ( $\frac{5}{8}$ in) timber to fit into this rebate to form a corner brace. When this has set, strengthen the corner by the addition of a square glue block, screwed and glued in place.

The rear foot side moulding should be trimmed square at the ends instead of mitred. Cut a rebate along the top edge as before but also down the square end to take a rear flat piece of material 16mm ( $\frac{5}{8}$ in) thick. Make this rear piece 85mm ( $3\frac{3}{4}$ in) high so the corner brace can fit along the top and the complete foot finishes at the required height of 100mm (4in).

The completed feet are fixed to the underside of the cabinet by glue and

screws. Remember when using screws in oak that they should be stainless steel or suitably plated to prevent corrosion due to the tannic acid present.

### The top panel

Carefully select the material for the top, and plane and thickness it to 22mm ( $\frac{7}{8}$ in). Biscuits are used to maintain alignment under cramping pressure. Keep them well clear of the ends so they do not show after trimming to size.

The top projects at the rear as well as the front to allow for the thickness of room skirting boards. Trim the top to size and then use a roundover cutter to work an ovolo moulding along the front and sides.

### Drawers

The basic drawer construction is shown in fig 2. Oak is used for construction with the exception of some of the drawer backs which were ash. The sides and back are thickened to 11mm ( $\frac{7}{16}$ in). The drawer fronts are thickened to 22mm ( $\frac{7}{8}$ in); up to 10mm ( $\frac{3}{8}$ in) will be removed by the fielding.

Cut the tails first, I used the bandsaw rather like a powered rasp for the rear dovetails. The waste in the drawer fronts is removed with a small straight router cutter



**13**  
The router has removed most of the waste from the blanks, ready for final shaping



**17**  
Field the top and bottom edges of the drawer fronts on the planer; finish the sides by hand

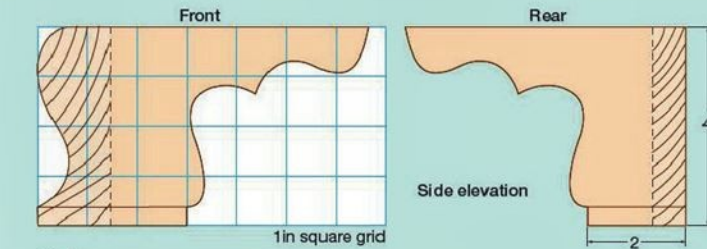
and paring chisel. Transfer the outline of the tails, to the ends of the front and back, using a marking knife. If the grain is fairly straight then it is easy to trim with a paring chisel. If not, use a dovetail saw and finish with chisels. Bore the holes for the handles before gluing the drawers together.

Cut a 6mm ( $\frac{1}{4}$ in) groove in the back of the drawer front and the inside of both sides to receive the drawer bottom. Glue up the drawers, then trim to fit the drawer opening prior to fielding. The fielding is 10mm ( $\frac{3}{8}$ in) deep and 19mm ( $\frac{3}{4}$ in) wide. After marking up the drawer front, form the top and bottom bevels using the planer, then finish the end bevels by hand planing.

### Finishing

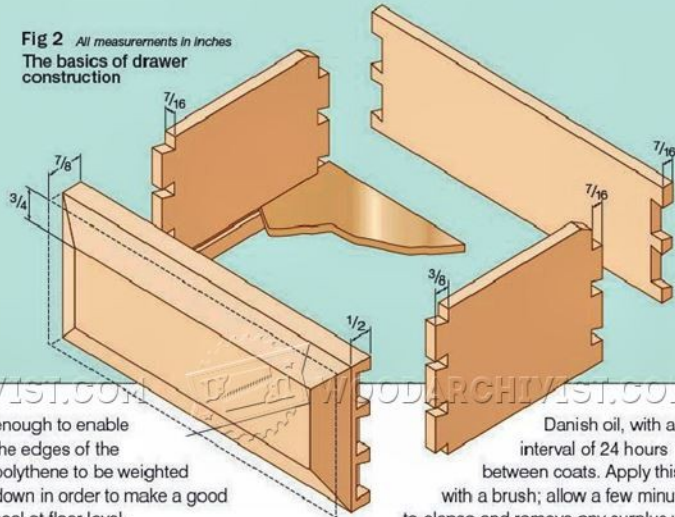
A slightly darker finish than natural was required, and fuming is a good way of achieving this. In this process the ammonia reacts with the tannic acid present in oak.

First of all a 1830 x 1372mm (6ft x 4ft 6 in) rectangular frame is built and covered in polythene. This is then fitted with a 'skirt' made from 2m wide polythene and suspended (in my case) from the garage ceiling. This is large enough to enclose the chest of drawers. Tape any joints in the polythene. Ensure that the frame is low



**Fig 1** All measurements in inches

**Fig 2** All measurements in inches  
The basics of drawer construction



enough to enable the edges of the polythene to be weighted down in order to make a good seal at floor level.

When the chest of drawers is placed in the tent include several samples of wood of similar material. These can be removed periodically and inspected for colour. Place saucers containing ammonia around the enclosure. Ammonia fumes are dangerous, so wear a vapour mask and goggles. Use an industrial strength ammonia. Household ammonia will also do the job, but it will take rather a long time.

It is not easy to give a time for the length of fuming because there are many different factors involved, but mine took 1 1/4 hours.

The next stage is to apply three coats of

Danish oil, with an interval of 24 hours between coats. Apply this with a brush; allow a few minutes to elapse and remove any surplus with a lint free cloth

Remember to dispose of all used Danish oil cloths carefully. They should be left flat to dry before disposal to avoid any risk of spontaneous combustion that can occur if they are bundled up in a confined space, such as the workshop bin. After allowing the Danish oil to harden for a day or two, apply clear wax polish with a Scotchbrite pad (don't use steel wool) to remove any dust nibs and polish up with a soft cloth.

All that remains now is to fit the MDF back panel and the drawer handles to complete the piece.



### FURTHER INFORMATION Hardware used in this project is available from

■ H E Savill  
9-12 St Martins Place  
Scarborough  
North Yorkshire YO11 2QH  
■ 01723 373032  
■ [www.originalmarquetry.co.uk](http://www.originalmarquetry.co.uk)